

Claims:

What is claimed is:

1. An electrical connector portion, comprising:
an insulating substrate having a first major face and an oppositely disposed second major face;
a plurality of non-recessed apertures extending through the insulating substrate from the first major face to the second major face;
a plurality of elongated electrically conducting members extending through the respective apertures; and
a plurality of reflowable electrical conductors disposed adjacent the first major face;
wherein each elongated electrical conductor extends into a respective reflowable electrical conductor.
2. The electrical connector portion of claim 1 wherein the elongated electrical conductors extend substantially beyond the first major face and the second major face.
3. The electrical connector portion of claim 1 wherein the apertures are substantially right circular cylindrical in shape.
4. The electrical connector portion of claim 1 wherein the apertures are rectangular slots.

5. The electrical connector portion of claim 1 further comprising a plurality of insulating posts extending from the first major face.

6. The electrical connector portion of claim 5 wherein the length each post is greater than the diameter of an adjacent solder ball.

7. The electrical connector portion of claim 5 wherein the length of each post is less than the diameter of an adjacent solder ball.

8. The electrical connector portion of claim 5 wherein the posts are substantially rectangular in cross-section and wherein each post further comprises at least one flattened conical contact surface formed thereon.

9. The electrical connector portion of claim 5 wherein each post further comprises four flattened conical contact surfaces and wherein the flattened conical contact surfaces are arrayed in a rectangular orientation.

10. The electrical connector portion of claim 1 wherein the elongated electrical conductors are adapted to be matingly engaged by the elongated conductors of a second electrical connector portion positioned adjacent the second major face.

11. The connector of claim 1 wherein the reflowable electrical conductors are adapted to fusingly engage an electrical device positioned adjacent the first major face.

12. An electrical connection device, comprising:

- an first insulating plate, having a first plate first face for engaging a first device and a first plate second face;
- a second insulating plate, having a second plate first face for engaging a second device and a second plate second face for removably engaging a first plate second face;
- a plurality of apertures formed through each respective insulating plate;
- a plurality of insulating posts formed on each respective first face;
- a plurality of fusible electrical conductors positioned on each respective first face; and
- a plurality of electrically conducting pins extending from each respective second face through the apertures;
- wherein each respective pin extends into a respective fusible electrical conductor.

13. The device of claim 12 wherein the apertures are positioned in an array and wherein posts are arrayed around the apertures.

14. The device of claim 13 wherein the posts are arrayed to form receptacles for holding the fusible electrical conductors substantially over the apertures.

15. The device of claim 12 wherein the posts are substantially rectangular in cross-section and wherein each post further comprises at least one flattened conical contact surface formed thereon.

16. The device of claim 15 wherein each post further comprises four flattened conical contact surfaces and wherein the flattened conical contact surfaces are arrayed in a rectangular orientation.

17. The device of claim 12 further comprising a first device fusingly engaged to the first plate first face and a second device fusingly engaged to the second plate first face, wherein the first plate second face is adapted to removably matingly engage the second plate second face, and wherein the first and second devices are in electrical communication through the matingly engaged first and second insulating plates.

18. An electrical connector apparatus, comprising:
- a first electrically insulating connector body having a first substantially planar major side and a second, oppositely disposed substantially planar major side;
 - a second electrically insulating connector body having a first substantially planar major side and a second, oppositely disposed substantially planar major side;
 - a fusing interface formed on each respective first major side;
 - a non-fusing interface formed on each respective second major side;
 - a plurality of non-recessed apertures formed through the respective electrically insulating connector bodies; and
 - a plurality of electrically conducting members extending through the respective apertures;
- wherein each respective fusing interface is adapted to be fusingly connected to a respective electrical device;
- wherein each respective non-fusing interface is adapted to be removably connected to another non-fusing interface; and
- wherein a first electrical device fusingly connected to the first electrically insulating connector body is adapted to be put into electrical communication with a second electrical device fusingly connected to second electrically insulating connector body through mating connection of the respective non-fusing interfaces.

19. The device of claim 18 wherein each respective fusing interface further comprises a plurality of solder balls and wherein each electrically conducting member extends through a respective non-recessed aperture into a respective solder ball.

20. The device of claim 18 further comprising a plurality of insulating posts extending from the first major side, wherein the insulating posts extend a post distance away from the first major surface, wherein the fusing interface has a fusing interface thickness, and wherein the post distance is substantially equal to the fusing interface thickness.

21. A method for producing an electrical connector, comprising the steps of:

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- a) providing an insulated plate having a first planar side and a second, oppositely disposed planar side and having a plurality of non-recessed apertures formed therethrough;
 - b) extending a plurality of electrically conducting pins through the respective apertures;
 - c) impaling a solder ball on each respective pin extending from the second planar side such that each pin penetrates the surface of a respective solder ball only once;
 - d) removably connecting a first electronic device to the pins on the first planar side; and
 - e) fusingly connecting a second electronic device to the second planar side.

22. The method of claim 21 wherein the second electronic device is an insulated plate having a first planar side and a second, oppositely disposed planar side and having a plurality of non-recessed apertures formed therethrough through which electrically conducting pins extend.